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## INLAND MOLLUSKS FROM VENEZUELA, SOUTHERN BRAZIL, AND PERU

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CURATOR EMERITUS, DIVISION OF LOWER INVERTEBRATES

This paper consists of a study of various South American collections, together with observations and remarks on little-known species from that area. Two new species are described.

All drawings were made by John Pfiffner, Staff Artist.

### **Dryptus lasalleanus**, new species

*Type*.—In Museum of the Sociedad de Ciencias Naturales La Salle, Department of Zoology, section of mollusks; Caracas, Venezuela. Collected in Mucurubá, State of Mérida, Venezuela.

*Diagnosis*.—A rather small species of *Dryptus*, characterized by the almost unicolored conchicin layer; by the purplish color of the earlier whorls, which are furthermore rib-striate; by distant heavy folds with very fine wrinkle-striation; and by the microscopical, interrupted spiral lines of the ultimate whorl.

*Description of type*.—Shell elongated-ovate, imperforate, rather heavy. Whorls  $5\frac{1}{4}$ , somewhat convex, of regular growth, separated by a distinct suture bordered below by a narrow whitish zone. The last whorl descends more obliquely, very shortly ascending at the aperture. The earlier whorls have a purplish tint which changes into a blackish brown at the beginning of the penultimate whorl. The first two whorls are finely and densely zigzag-wrinkled, a feature also present on the third whorl, which, in addition, develops subvertical striae which become gradually rib-like, making the suture appear almost crenulate. On the fourth whorl these rib-striae, though somewhat fainter, stand out by their darker color, whereas on the last whorl they show only as projecting, darker-colored growth marks. There is a marking of very faint, submicroscopical vertical wrinkles between

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the growth lines. A very fine, indistinct and interrupted spiral stria-  
tion crosses these vertical wrinkle-lines (fig. 60). Aperture decidedly  
higher than the spire, ovate, pointed above, bluish inside, with a  
thickened, slightly reflexed lip of buff color; columella very slightly  
folded, parietal callus thin, bluish.

*Measurements of type.*—Height 48.4 mm., width 24.5 mm., height  
of aperture 28.0 mm., width of aperture 14.8 mm. (fig. 60).

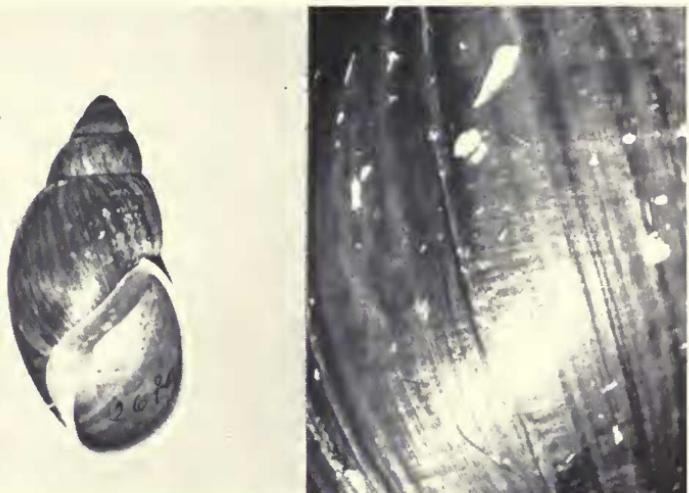


FIG. 60. *Dryptus lasalleanus*, new sp., type. Left,  $\times 1$ ; right, surface of last whorl,  $\times 3$ .

*Notes on paratypes.*—There are a number of paratypes from the same locality as the type in the collection of the Sociedad de Ciencias Naturales La Salle, and seven, with the same data, in the collection of Chicago Natural History Museum (no. 52445).

*Remarks.*—There is little variability in this species as far as the surface sculpture and coloration are concerned. However, with respect to the measurements of the shells, the following maximum-minimum values were found: Largest specimen, 52.2 mm.; smallest specimen, 43.0 mm.; most obese specimen, 27.5 mm.

#### INLAND MOLLUSKS FROM SOUTHERN BRAZIL

In the course of recent years, Chicago Natural History Museum has received from an entomologist, Mr. Fritz Plaumann, of Nova Teutonia, Santa Catarina, Brazil, repeated shipments of shell material. The species included are in most cases small forms, such as an

entomologist may pick up with insects, either by sweeping grass or bushes or from leaf mould. The aquatic specimens are also small forms.

The following lists show the material collected at various localities:

NOVA TEUTONIA, SANTA CATARINA, BRAZIL, 27° 11' S. LAT., 52° 23' W. LONG.

*Radiodiscus (Radioconus) clarus* Thiele  
*Radiodiscus (Radiodiscus) janeirensis* Thiele  
*Radiodiscus (Radiodiscus) jheringi* Thiele  
*Radiodiscus (Radiodiscus) gordurasensis* Thiele  
*Radiodiscus (Radioconus) göldii* Thiele  
*Radiodiscus (Radioconus) costellifer* H. Scott (new record; see p. 366)  
*Happia (Happia) miradiscus* Thiele  
*Miradiscops (Microhappia) brasiliensis* Thiele  
*Leptinaria (Leptinaria) monodon* C. B. Adams (two specimens; first record from outside Puerto Rico)  
*Drymaeus (Drymaeus) poecilus icterinus* Ancey (first record from Santa Catarina)  
*Macrodontes (Macrodontes) odontostomus* Sowerby  
*Odontostomus (Bahiensis) tetriculus* Martens  
*Bulimus (Protoglyptus) eudiophtus* Ihering (see note, p. 367)  
*Strophocheilus (Megabulimus) oblongus oblongus* Mueller  
*Vertigo (Vertigo) ovata* Say (first record from mainland of South America)  
*Zonitoides (Zonitoides) nitidus* Mueller  
*Habroconus (Pseudoguppya) semen-lini* Moricand  
*Chilina fluminea microdon* Sowerby  
*Aplexa (Stenophysa) rivalis* Maton and Rackett  
*Australorbis camerunensis* C. Boettger (see note, p. 366)  
*Acrorbis petricola* Odhner  
*Burnupia (Uncancylus) barilensis* Moricand  
*Potamolithus lapidum* Orbigny  
*Littoridina charruana* Orbigny  
*Adelopoma paraguayanum* Parodiz  
*Helicina (Oxyrhombus) densestriata* A. J. Wagner  
*Alcadia (Alcadia) iheringi* A. J. Wagner  
*Pisidium globulus* Clessin

TATÚ CREEK, SANTA CATARINA, BRAZIL

*Littoridina charruana* Orbigny

ENGANO RIVER, SANTA CATARINA, BRAZIL

*Littoridina charruana* Orbigny

CHAPECOZINHO RIVER, SANTA CATARINA, BRAZIL

*Littoridina charruana* Orbigny

XANXERE, SANTA CATARINA, BRAZIL

*Happia (Happia) insularis* O. Boettger

PINHAL-PRETO, SANTA CATARINA, BRAZIL

*Radiodiscus (Radioconus) clarus* Thiele  
*Radiodiscus (Radiodiscus) gordurasensis* Thiele  
*Habroconus (Pseudoguppya) semen-lini* Moricand  
*Adelopoma paraguayanum* Parodiz

## LINHA FACAÕ, SANTA CATARINA, BRAZIL

*Pseudosuccinea peregrina* Clessin  
*Littoridina charruana* Orbigny  
*Potamolithus catharinae* Pilsbry  
*Potamolithus philippianus* Pilsbry

## SAÕ CARLOS, SANTA CATARINA, BRAZIL

*Radiodiscus (Radioconus) clarus* Thiele  
*Radiodiscus (Radiodiscus) jheringi* Thiele  
*Radiodiscus (Radiodiscus) gordurasensis* Thiele  
*Happia (Happia) insularis* O. Boettger

## RIO DOURADINHO, RIO GRANDE DO SUL, BRAZIL

*Potamolitus lapidum* Orbigny

## ERECHIM, RIO GRANDE DO SUL, BRAZIL

*Australorbis camerunensis* C. Boettger

## RIO ARATIBA, RIO GRANDE DO SUL, BRAZIL

*Aplexa (Stenophysa) rivalis* Maton and Rackett  
*Pseudosuccinea peregrina* Clessin  
*Burnupia (Uncancylus) barilensis* Moricand

**Radiodiscus (Radioconus) costellifer** H. Scott. Figure 61.

I was very much surprised to recognize this species, described only two years ago from Villarica, Paraguay, in the material collected by Mr. Plaumann at Nova Teutonia. I have four specimens at hand, slightly smaller than Mrs. Hylton Scott's type; the largest is about 1.5 mm. in diameter. Other small differences are that the number of leaf-like ribs is somewhat smaller in the Brazilian specimens than in those from Paraguay, and in my specimens the aperture is not quite as high as in the authoress' specimens. However, these discrepancies are not important enough to consider the Brazilian specimens as a different species.

**Australorbis camerunensis** C. Boettger

Durval T. de Lucena (Rev. Bot. Zool. Afr., 48: 176-178, 1953) has mentioned the occurrence of this West African species in Brazil; it had been found in various localities near Santos, Saõ Paulo. In his study on the Brazilian planorbids in 1956 (Resenha Sistemática do Planorbideos Brasileiros, 104 pp., 9 pls.), the same author lists this species from some more localities near Santos and, furthermore, from Quinta da Boa Vista in the Federal District of Brazil. In the material received from Mr. Plaumann and listed above, *Australorbis camerunensis* was represented from Nova Teutonia, Santa

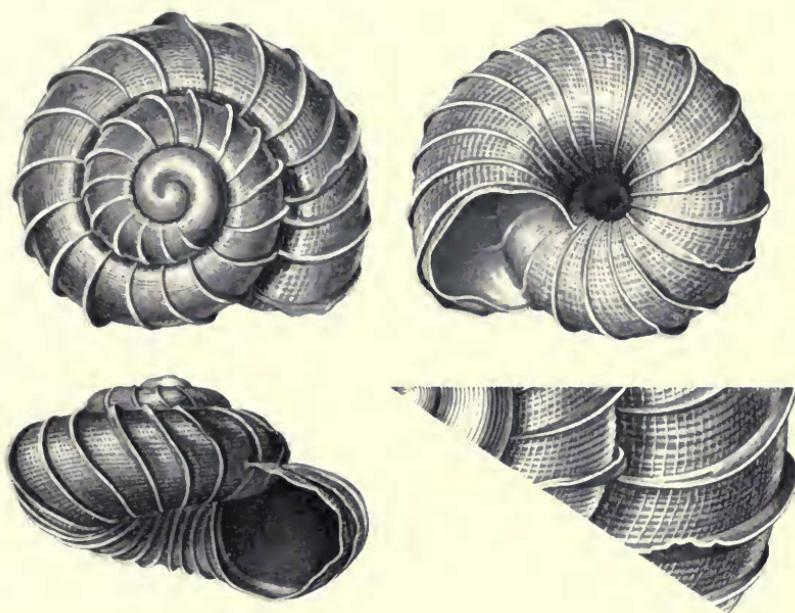


FIG. 61. *Radiodiscus (Radioconus) costellifer* H. Scott. Views from above, below, and side; about  $\times 40$ . Section of upper surface; about  $\times 80$ .

Catarina, and from Erechim, Rio Grande do Sul, proving thus its farther distribution to the south of Brazil.

#### **Bulimulus (Protoglyptus) eudioptus** Ihering

Pilsbry published in 1897 (Man. Conch., 2nd ser., 11: 89, pl. 14, figs. 16, 17) under the authorship of H. von Ihering, a species of *Bulimulus* which he named *eudioptus*. The description was apparently based upon a single specimen, which, as we know now, was not even fully grown. For this reason, both the verbal description and the figures are not satisfactory; indeed, the species is not recognizable. The magnified drawing of the sculpture of the nepionic whorls is especially misleading.

Among the material received at various occasions from Nova Teutonia, Santa Catarina, from Mr. Plaumann, there were some specimens of a *Protoglyptus* which appeared new to me, since its apical sculpture did not fit any species described. Before I described this supposed novelty, my younger colleague Dr. Alan Solem had occasion to examine the bulimulids in the collection of the Academy of Natural Sciences

in Philadelphia. He discovered there a species which seemed identical with my own material of the supposed new species, and he called my attention to this fact. I am convinced that Plaumann's specimens are indeed the species *eudiophtus* von Ihering, and they are listed under this name. It seemed worth while to me to provide a new description and new figures of this badly described and figured species and to offer additional information based upon my richer material of full-grown specimens.

*Description.*—Shell narrowly umbilicate, small, ovate-conic, thin and translucent; horn-brown, and sometimes on the last whorl irregular whitish blotches which, when present, extend from suture to base. Surface rather dull, finely striated with narrow striae. Spire higher than the aperture, slightly obese, perceptibly tapering toward the apex which is slightly pointed and which offers a *Protoglyptus*-sculpture (fig. 63). Whorls  $6\frac{1}{2}$ , the upper ones slightly, the last two ones definitely convex; the last swollen near the suture, subcompressed below. Umbilical chink narrow.

Aperture small, ovate, moderately oblique, with the outside color shining through; peristome thin, not expanded, the columellar margin dilated over the umbilical chink, the columella slightly arched.

There is a noticeable range of variation in the general shape of the shell. The shell measurements of the slender specimens (fig. 62, left) contrast greatly with those of a representative of the obese group (fig. 62, right). The extremes just mentioned are, however, connected by intermediate stages which seem to prove that the specimens are specifically identical. The other features mentioned in my description are found in all specimens of the species; only the whitish blotches on the last whorl may be reduced in size and extent or may be lacking.

*Measurements.*—Height 13.4, 14.3 mm., width 7.8, 7.2 mm., height of aperture 7.11, 6.9 mm., width of aperture 4.5, 3.8 mm. (fig. 62).

#### **Epiphragmophora (Epiphragmophora) connectens, new species**

*Type.*—Chicago Natural History Museum no. 51919, from Cambache near Chongoyape, Lambayeque, Peru; collected on March 19, 1954, by Celestino Kalinowski.

*Diagnosis.*—A species of *Epiphragmophora* proper, characterized by bluntly angular periphery and a very wide umbilicus.

*Comparisons.*—This species resembles *Karlschmidtia lentiformis* Haas in being rather flat and indistinctly keeled; however, it is

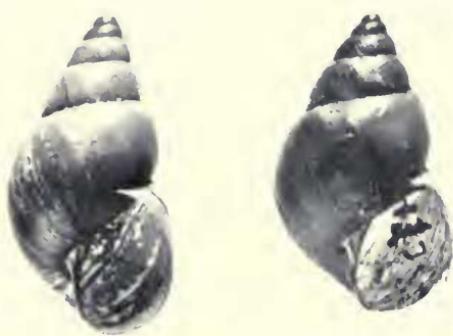


FIG. 62. *Bulimulus (Protoglyptus) eudioptus* Ihering; about  $\times 3$ .

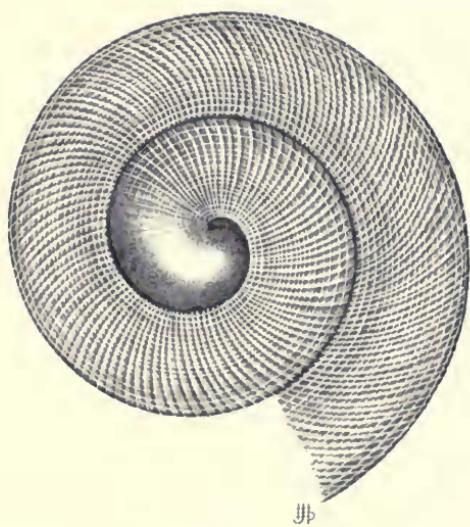


FIG. 63. *Bulimulus (Protoglyptus) eudioptus* Ihering, nepionic whorls;  $\times 75$ .



FIG. 64. *Epiphragmophora (Epiphragmophora) connectens*, new sp., type. Views from above, below, and side; about  $\times 2$ .

always smaller, its umbilicus is wider and it lacks entirely the costulation so obvious in *K. lentiformis*. Its closest ally among its congeners is *Epiphragmophora olssoni* Pilsbry, which, however, is higher and less widely umbilicate.

*Description of type.*—Shell thin, depressed, somewhat lens-shaped, indistinctly carinate, very openly umbilicate, the umbilicus contained about three times in the diameter of the shell. Whorls  $4\frac{1}{2}$ , growing regularly, little obese, the last not descending in front. Color yellowish brown, with one supra-peripheral chestnut-brown band with lighter borders. The surface of the first  $1\frac{1}{2}$  whorls is smooth, the rest finely striate with weak malleations. The aperture is oblique and shortly elliptical, the upper margin almost straight, the lower slightly curved. The peristome is white, rather wide, evenly reflected throughout.

*Measurements of type.*—Greater diameter 26.9 mm., smaller diameter 21.9 mm., height 11.2 mm., width of aperture 11.2 mm., height of aperture 8.7 mm.

*Paratypes.*—There are two paratypes (no. 70886) from the same locality as the type, one adult and one young. The adult resembles the type exactly, but is slightly higher and its peristome is bordered on the inside by a pale grayish-rose zone. Its measurements are:

greater diameter 25.8 mm., smaller diameter 21.5 mm., height 12 mm., width of aperture 12.6 mm., height of aperture 8.8 mm.

The younger paratype of only  $3\frac{1}{2}$  whorls is sharply keeled below the band.

Three more paratypes, two adult ones and an immature one, from Mount Campana near Trujillo, Peru, 1,000–1,500 meters alt., collected by Dr. W. Weyrauch, are Museum of Comparative Zoology no. 109638, and Chicago Natural History Museum no. 70887; they are bleached and do not show the band; they are typical in every respect.

The dimensions of the two adult specimens are: greater diameter 24.9, 24.0 mm., smaller diameter 20.4, 20.2 mm.